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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,820	01/22/2001	David C. Sudolcan	L-0170.23 (D-E)	2826
7590	05/19/2004		EXAMINER	
LAW OFFICES OF CHRISTOPHER L. MAKAY			JACKSON, ANDRE K	
1634 Milam Building			ART UNIT	PAPER NUMBER
115 East Travis Street				
San Antonio, TX 78205			2856	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/766,820	SUDOLCAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	André K. Jackson	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 02 March 2004.

2a) This action is **FINAL**.                                   2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 60 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 60 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All   b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

2. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bethuy in view of Piatkowski, Jr.

Regarding claim 60, both Bethuy and Piatkowski, Jr. (Apparatus for generating an electrical signal indicative of liquid level) disclose a first probe extending into a liquid container, a second probe extending into a liquid container (38a, 38b) and (Figures 1 and 4) respectively. A controller coupled to the first and second probe (140) and (Figures 1 and 4) respectively. Bethuy discloses where both the first and second probes receives a signal indicating an insufficient amount of liquid in the liquid container when both the first probe and the second probe are contacted by liquid in the container the signal is attenuated to the ground probe indicating to the controller a sufficient amount of liquid in the liquid container (Columns 8 and 9). What Bethuy does not disclose is where the controller outputs and receives a pulse signal received at the first probe, second probe and the ground probe. However, Piatkowski, Jr. discloses where the

controller outputs and receives a pulse signal (Abstract, Column 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bethuy to include where the controller outputs and receives a pulse signal as taught by Piatkowski, Jr. By adding this feature the impedance between the probes would be inversely proportional to the amount of probe surface area in contact with the liquid where the current flow is directly proportional to the liquid level.

***Response to Arguments***

3. Applicant's arguments filed 03/02/04 have been fully considered but they are not persuasive. Applicant has argued that the system of Piatkowski does not have a pulsed signal but an alternating signal. However, it is well known in the art to have one in place of the other. The artisan knows how the change in signal would influence the output of the device. For instance, Kelly (6,018,247) discloses in the patent entitled "Time domain reflectometer linear position sensing" where the pulse signal is converted to an oscillating signal (Column 2, lines 47-55). This shows that it is possible to use DC pulses for oscillating signals as evidenced by Kelly. Meanwhile, Matzuk (4,092,867) discloses in the patent entitled "Ultrasonic scanning apparatus" where oscillations are converted to a pulse signal (Column 16, lines 14-29). This shows that it is possible to use oscillating signals for pulses as evidenced by Matzuk.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (571) 272-2196. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

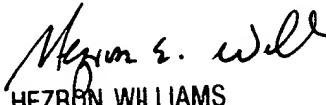
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.J.



May 14, 2004



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